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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,757	01/23/2008	Dietmar P. Rabussay	GTI-1490-US	6894
89065	7590	01/08/2010		
VGX Pharmaceuticals LLC 450 Sentry Parkway Blue Bell, PA 19422			EXAMINER TATE, CHRISTOPHER ROBIN	
			ART UNIT 1655	PAPER NUMBER
			NOTIFICATION DATE 01/08/2010	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/516,757	Applicant(s) RABUSSAY, DIETMAR P.	
	Examiner Christopher R. Tate	Art Unit 1655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1206, 1007, 0108, 1008</u> . | 6) <input type="checkbox"/> Other: ____. |

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DETAILED ACTION

Claims 1-7 are presented for examination on the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites the limitation "the frequency which multiple pulses are applied" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. That is, claim 6 depends from claim 1 which does not recite a step involving multiple pulses.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baer (US 5,128,257).

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An electroporation method comprising contacting tissue or cells suspended in a medium with electrodes selected from gold electrodes, gold plated electrodes, and gold alloy electrodes; and charging said electrodes with an electric pulse capable of electroporating said tissue or cells. Dependent claims include the pulse being a square pulse, bipolar pulse, or rectangular pulse, the nominal field strength of the pulse being 10-1500 V/cm, and the duration of the pulse being between 1 and 100 ms.

Baer beneficially teaches an electroporating method for use with cell and tissue cultures, including so as to efficiently and effectively introduce agents including polynucleotides such as DNA and RNA at an improved transfer rate therein, wherein the method employs electrodes inserted in the growth medium which also contact the cells or tissues, and whereby the electrodes are charged with an electric pulse capable of electroporating the tissue or cells. Baer further teaches using one or more of various power pulses including a square pulse, as well as multiple and/or bipolar pulses to produce voltage gradients preferably in the range of 200-2000 V/cm, and a pulse width preferably in the range of 1-10 milliseconds (ms). Baer also advantageously discloses that the electrodes employed therein are preferably made from one of several metal conductive materials including gold (as well as alloys thereof, and/or metal-plated versions thereof) because the described metals (including gold) are non-toxic to most cells and, in some cases, certain cell types can actually attach to and grow on the surface thereof (see entire document including Figures, col 2, line 51 – col 3, line 15; col 4, line 66 – col 5, line 7; col 8, line 61 – col 9, line 5; col 10, lines 21-51; col 11, lines 9-57).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to perform an electroporation method on cells and/or tissues within a culture medium

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(as described by Baer) via contacting the culture medium with gold, gold alloy, or gold-plated electrodes, and charging the electrodes with an electric pulse (including within the instantly claimed working parameters with respect to the type of pulse, the nominal field strength, the duration of the pulse, etc) capable of electroporating the cells/tissues within the culture medium so as to efficiently and effectively introduce agents including polynucleotides such as DNA and RNA at an improved transfer rate therein based upon the beneficial teachings provided by Baer, especially given that Baer beneficially teaches that metal electrodes such as gold, gold-alloy and/or gold-plated electrodes are preferably used within such a method because they are non-toxic to most cells and, in some cases, certain cell types can actually attach to and grow on the surface thereof. If not intrinsic thereto, the adjustment of particular conventional working conditions (e.g., determining a suitable frequency range when multiple pulses are employed) is deemed merely a matter of judicious selection and routine optimization which is well within the purview of the skilled artisan.

Thus, the invention as a whole is *prima facie* obvious over the reference, especially in the absence of evidence to the contrary.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffman (US 6,120,493).

Hoffman beneficially teaches an electroporation method for use with tissue (e.g., *in vivo* tissue) as well as with cells within a culture medium (e.g., *in vitro* cell cultures) which effectively and efficiently introduces agents including polynucleotides such as DNA and RNA within the cells of the tissue or cell culture medium, wherein the method comprises contacting

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the tissue (or cells) using needle electrodes which are inserted therein – thus, penetrating the tissue(s); whereby the electrodes are charged with an electric pulse capable of electroporating the tissue(s). Hoffman further teaches using one or more of various power pulses including a square pulse, rectangular pulse, multiple pulse and/or bipolar pulses to produce voltage gradients preferably in the range of 50-1500 V/cm, and a pulse width preferably in the range of 5 microseconds to 50 milliseconds (ms). Hoffman also advantageously discloses that the electrodes employed therein may be constructed of any suitable electrically conductive materials including one of several metals such as gold or an alloy thereof (see entire document including Figures, col 2, lines 10-67; col 4, lines 43-67; col 6, lines 13-39; col 8, line 61 – col 9, line 6; col 9, lines 59-67; col 14, lines 51-63; col 15, Example 1, cols 16-18, Examples 2-4, and claims).

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to perform an electroporation method on tissues (e.g., in vivo tissues) or on cells within a culture medium (as both described by Hoffman) via contacting the tissue(s) or culture medium with gold or gold alloy needle electrodes, and charging the needle electrodes with an electric pulse (including within the instantly claimed working parameters with respect to the type of pulse, the nominal field strength, the duration of the pulse, etc) capable of electroporating the cells/tissues within the culture medium so as to efficiently and effectively introduce agents including polynucleotides such as DNA and RNA therein based upon the beneficial teachings provided by Hoffman. If not intrinsic thereto, the adjustment of particular conventional working conditions (e.g., determining a suitable frequency range when multiple pulses are employed) is deemed merely a matter of judicious selection and routine optimization which is well within the purview of the skilled artisan.

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Thus, the invention as a whole is *prima facie* obvious over the reference, especially in the absence of evidence to the contrary.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffman (US 6,120,493) and Baer (US 5,128,257).

The cited references are relied upon for the reasons set forth above.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to perform an electroporation method on tissues - e.g., in vivo tissues (as described by Hoffman) or on cells within a culture medium (as described by Baer and by Hoffman) via contacting the tissue(s) or culture medium with gold/gold alloy/gold plated needle electrodes, and charging the needle electrodes with an electric pulse (including within the instantly claimed working parameters with respect to the type of pulse, the nominal filed strength, the duration of the pulse, etc) capable of electroporating the cells/tissues so as to efficiently and effectively introduce agents including polynucleotides such as DNA and RNA therein based upon the beneficial teachings provided by cited references as a whole, including because (where applicable) Baer expressly teaches that metal electrodes such as gold, gold-alloy and/or gold-plated electrodes are preferably used within such a method since they are non-toxic to most cells and, in some cases, certain cell types can actually attach to and grow on the surface thereof. The adjustment of particular conventional working conditions (e.g., determining a suitable frequency range when multiple pulses are employed) is deemed merely a matter of judicious selection and routine optimization which is well within the purview of the skilled artisan having the cited references before him/her as a guide.

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From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention.

Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Conclusion

No claim is allowed.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Tate whose telephone number is (571) 272-0970. The examiner can normally be reached on Mon-Thur, 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terry McKelvey can be reached on (571) 272-0775. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher R. Tate/
Primary Examiner, Art Unit 1655